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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b> <b>C07K 14/16, C12N 15/49, 15/67,</b> <b>A61K 48/00</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 98/34640</b> <b>(43) International Publication Date:</b> 13 August 1998 (13.08.98)
<b>(21) International Application Number:</b> PCT/US98/02293 <b>(22) International Filing Date:</b> 3 February 1998 (03.02.98)  <b>(30) Priority Data:</b> 60/037,854 7 February 1997 (07.02.97) US 9705040.5 12 March 1997 (12.03.97) GB  <b>(71) Applicant (for all designated States except US):</b> MERCK & CO., INC. [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065 (US).  <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> SHIVER, John, W., Jr. [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065 (US). DAVIES, Mary-Ellen, M. [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065 (US). FREED, Daniel, C. [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065 (US). LIU, Margaret, A. [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065 (US). PERRY, Helen, C. [US/US]; 126 East Lincoln Avenue, Rahway, NJ 07065 (US).  <b>(74) Common Representative:</b> MERCK & CO., INC.; 126 East Lincoln Avenue, Rahway, NJ 07065 (US).		<b>(81) Designated States:</b> AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, GE, GW, HU, ID, IL, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA, US, UZ, VN, YU, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>  <b>(88) Date of publication of the international search report:</b> 19 November 1998 (19.11.98)
<b>(54) Title:</b> SYNTHETIC HIV GAG GENES  <b>(57) Abstract</b>  Synthetic DNA molecules encoding HIV <i>gag</i> and modifications of HIV <i>gag</i> are provided. The codons of the synthetic molecules are codons preferred by the projected host cell. The synthetic molecules may be used as a polynucleotide vaccine which provides effective immunoprophylaxis against HIV infection through stimulation of neutralizing antibody and cell-mediated immunity.		

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/02293

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C07K14/16 C12N15/49 C12N15/67 A61K48/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 09378 A (THE GENERAL HOSPITAL CORP) 28 March 1996 see page 1 - page 26 see page 41	1-3, 5, 10-12
Y	---	4, 6-9
X	HAAS J ET AL: "CODON USAGE LIMITATION IN THE EXPRESSION OF HIV-1 ENVELOPE GLYCOPROTEIN" CURRENT BIOLOGY, vol. 6, no. 3, 1 March 1996, GB, pages 315-324, XP000619599 see the whole document ---	1-3, 5, 10-12
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☒ Further documents are listed in the continuation of box C.

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Date of the actual completion of the international search

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International Application No  
PCT/US 98/02293

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	LIU M A ET AL: "Vaccination of mice and nonhuman primates using HIV-gene-containing DNA" ANTIBIOTICS AND CHEMOTHERAPY, vol. 48, 1996, BASEL CH, pages 100-104, XP002073766 see the whole document	1-12
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E	WO 98 12207 A (THE GENERAL HOSPITAL CORP) 26 March 1998 see page 1 - page 2 see page 3, line 20 - line 23 see page 5, line 20 - page 6, line 3 see page 10, line 18 - page 21, line 18 see claims 1-4	1-3,5, 10-12

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